TCM-77V

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MT-77-44

SPECIFICATIONS

Recording system: 2-track 1-channel monaural
Frequency response: 150–8 000 Hz (For normal tape TYPE I)
Power output (DC): 250 mW (at 10% harmonic distortion)
Input: Microphone input jack (minijack) sensitivity 0.2 mV for 3 kΩ or lower impedance microphone
Output: Earphone jack (minijack) for 8–300 ohm earphone
Power requirements: 3 V DC, two size AA (R6) batteries
DC IN 3 V jack accepts:
Sony AC-77 AC power adaptor
120 V AC, 60 Hz
Sony DCC-70 car battery cord (not supplied) for use on 12 V car battery

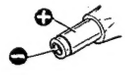
Battery life:

Batteries	Recording (hours)
Sony batteries SUM-3 (NS)	Approx. 2
Sony alkaline batteries AM3 (N)	Approx. 6

For maximum performance, we recommend the use of alkaline batteries.
Dimensions: Approx. 111.8 × 35.2 × 79.5 mm (w/h/d)
(4 3/4 × 1 7/16 × 3 1/4 inches)
Inc. projecting parts and controls
Weight: Approx. 260 g (9.2 oz) incl. batteries
Accessories supplied: Carrying case (1)
Earphone microphone (1)
AC power adaptor (AC-77) (1) (US model only)

Note: Use only the recommended AC power adaptor or car battery cord manufactured by Sony. Polarity of the plugs of other manufacturers may be different.

Polarity of the TCM-77V



Design and specifications subject to change without notice.

MICROFILM

CASSETTE-CORDER
SONY®

FEATURES

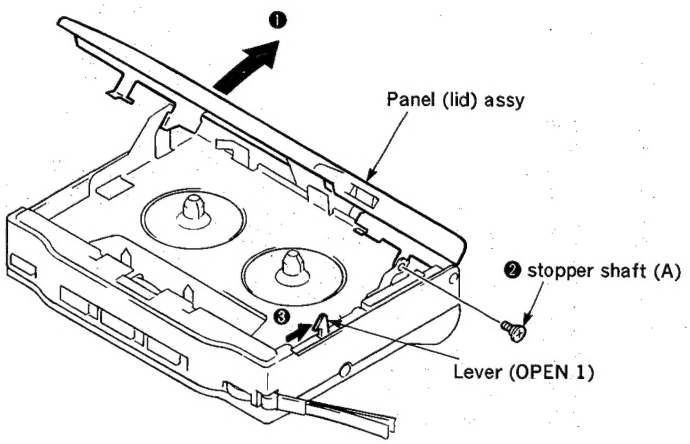
- Auto-reverse function allows you to record or playback both sides of a cassette continuously without turning the cassette over.
- A large display window allows you to read indicators easily.
- Cue marker function to mark a desired portion during recording.
- VOR function allows you to record only when sound is picked up.
- Adjustable tape speed in playback mode.
- Equipped with a microphone sensitivity switch to adjust the recording level depending on the microphone you are using and the recording condition.
- Safety HOLD switch to prevent the function buttons (REC, PLAY, FF/CUE, PAUSE, REW/REVIEW, STOP, DIR) from being activated by mistake.

TABLE OF CONTENTS

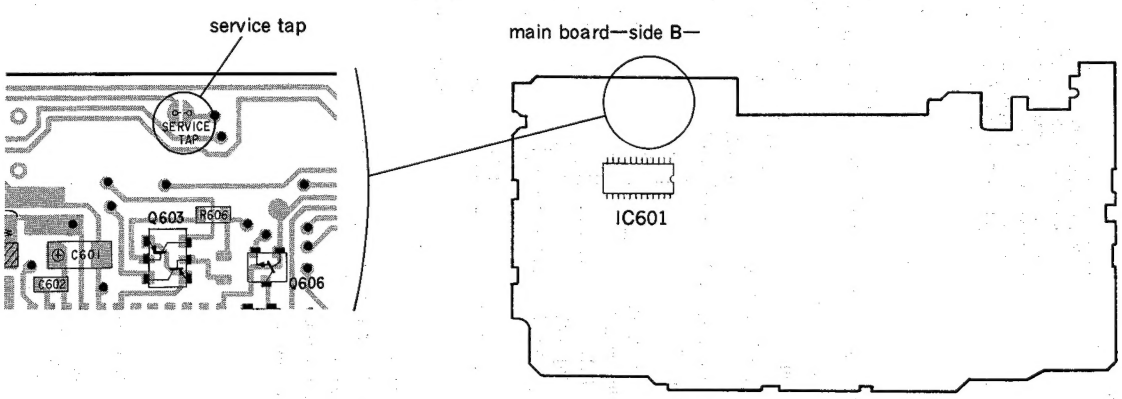
SECTION 1
SERVICING NOTES

1-1. METHOD OF TORQUE MEASUREMENT AND TAPE PASS CHECK

1. Open the panel (lid) assy.
2. Remove the stopper shaft (A).
3. Insert a torque meter and a mirror cassette and measure the torque and tape pass.
4. When taking out a torque meter and a mirror cassette, press the STOP button, shift the lever (Open 1) in the direction of an arrow ❸ and return the head completely.



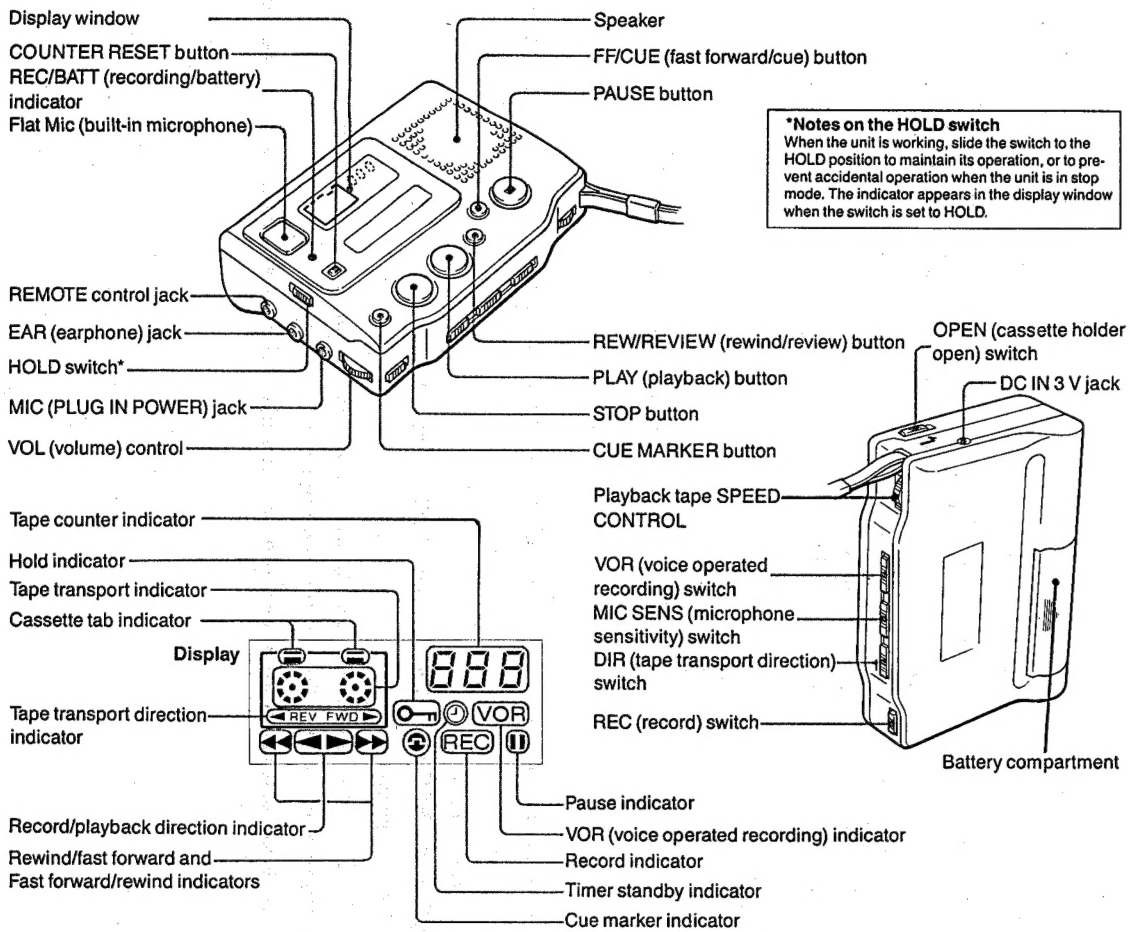
1-2. SERVICE MODE



Soldering the service tap allows to check the each mode of the mechanism deck on the condition that the door is opened.

(1) PLAY mode .....Press the PLAY button.
(2) REC mode.....In the FWD mode, REC SW (S706) is momentarily turned ON.
(3) PAUSE mode .....Press the PAUSE button.
(4) STOP mode .....Press the STOP button. (Stops after setting REW mode for approximately two seconds.)
(5) DIR mode .....PLAY button → S101 → DIR SW (S707) is momentarily turned ON.
(6) FF/REW mode ....Press the FF/REW button. (Stops after setting FF or REW mode for approximately two seconds.)

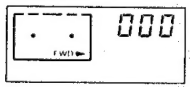
2-1. PARTS IDENTIFICATION



***Notes on the HOLD switch**
When the unit is working, slide the switch to the HOLD position to maintain its operation, or to prevent accidental operation when the unit is in stop mode. The indicator appears in the display window when the switch is set to HOLD.

2-2. INSTALLING BATTERIES

When you install batteries, the following indicators will appear in the display window right after all the indicators appear for a second.

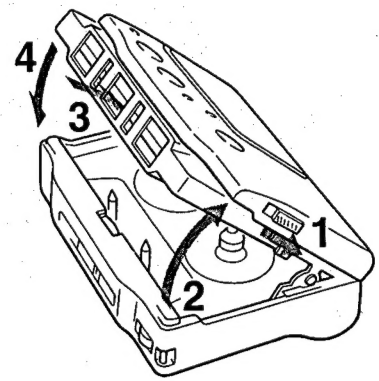


When the lid of the battery compartment comes off
Hook one of the projecting parts of the lid into the corresponding hole of the compartment first, and then push in the other side.

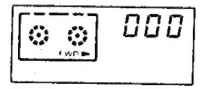
2-3. INSTALLING A CASSETTE

Install a cassette when the unit is in the stop mode.
Take up any slack of the tape with a pencil before installing a cassette.

1 Slide OPEN in the direction of the arrow.
2 Open the lid while keeping OPEN slid.
3 Install a cassette.
4 Close the lid.

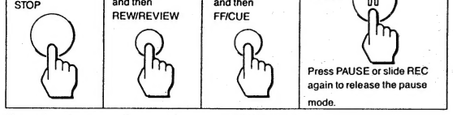


When you install a cassette
The following indicators appear in the display window.
The FWD ▶ indicator always appears when you open the lid.



2-4. RECORDING

To stop recording	To rewind the tape	To wind the tape rapidly	To stop recording for a moment
STOP	Press STOP and then REW/REVIEW	Press STOP and then FF/CUE	PAUSE



Press PAUSE or slide REC again to release the pause mode.

If you begin recording on the upper (FWD) side
When the tape ends, the tape direction automatically changes to the ◄ REV (reverse) mode, and recording of the reverse side begins.

At the end of the reverse (REV) side recording
The tape stops (automatic shut off), and the tape direction automatically changes to the FWD ► (forward) mode.

Locating the Cue Marker Position

Press CUE MARKER during recording. ☁ blinks for a few seconds. You will hear a buzz at the cue marker position when you press FF/CUE or REW/REVIEW while playing back the tape.

It is convenient to mark at an important part of speech, for example, during an interview to quickly find that portion by pressing FF/CUE or REW/REVIEW while playing back the tape.

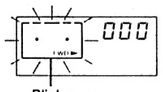
Notes
- Cue will not be marked if you press STOP or PAUSE immediately after having pressed CUE MARKER.
- You may hear noise at the cue marker position during playback when you are listening to the recording through a sensitive earphone or ear receiver.

Reading tape transport direction indicators

Display during recording or playback	Fast forward	Rewind
Upper (FWD) side ►	FF/CUE button ►►	REW/REVIEW button ◄◄
Reverse (REV) side ◄	FF/CUE button ◄◄	REW/REVIEW button ►►

The tape is wound in forward direction by pressing FF/CUE, and in the opposite direction by pressing REW/REVIEW, regardless of which side you are recording on or listening to.

If you operate REC/PLAY/STOP/FF/REW/DIR/PAUSE when a cassette is not in the unit



The cassette indicator blinks to let you know a cassette is not in the unit.

Forward side priority function
If you open the cassette holder in the stop mode, the tape direction will be automatically set to the FWD ► (forward) mode and recording or playback will be started from the upper (FWD) side.

Notes
- When recording for a long time, use new batteries.
- When REC/BATT indicator goes off, the recording may not be done properly. In this case, replace the batteries with new ones.
- Do not set the earphone volume too high, otherwise a howling effect (acoustic feedback) may occur. When you take off the earphone from your ear, lower the earphone volume, otherwise a howling effect may occur.
- Do not use the microphone near a lamp cord or fluorescent lamp. It may pick up unnecessary noise.
- DIR switch does not function while recording.
- Tape SPEED CONTROL does not operate while recording.

Adjust MIC SENS according to a microphone
Adjust MIC SENS switch depending on the microphone you are using.

	MIC SENS*
Earphone microphone Built-in microphone	M or H
External microphone (not supplied)	L or M

* L: Only for loud sound M: Normal recording H: For low sound

Recording only when sound is picked up (VOR system)**
Slide VOR to ON. The VOR indicator appears in the display window and the unit will go into the recording mode only when the microphone picks up sound.
**With the VOR (voice operated recording) system, recording starts automatically at a certain sound level, and stops when sound is no longer detected. This is useful to avoid an empty recording.
The VOR indicator blinks when sound is not detected.

While the VOR system is operating
Recording will not stop when the sensitivity is too high and will not start when it is too low.

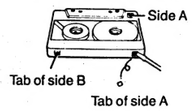
	MIC SENS***
A loud place	L or M
A quiet or open place	M or H

*** L: Start only at high sound level M: Normal H: At low sound level.

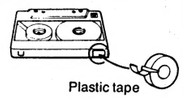
Reviewing the material just recorded
During recording, press REW/REVIEW.
When you release, playback will begin automatically from that point.

To correct a previously recorded portion during playback, simply slide REC in the direction of the arrow. The recorder will immediately change to the recording mode.

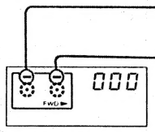
To prevent accidental erasure
Break out the cassette tab of side A or B as illustrated.



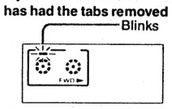
To reuse a cassette for recording, cover the broken tab slot.



When the cassette has had the tabs removed



If you slide REC in the direction of the arrow when the tape has had the tabs removed



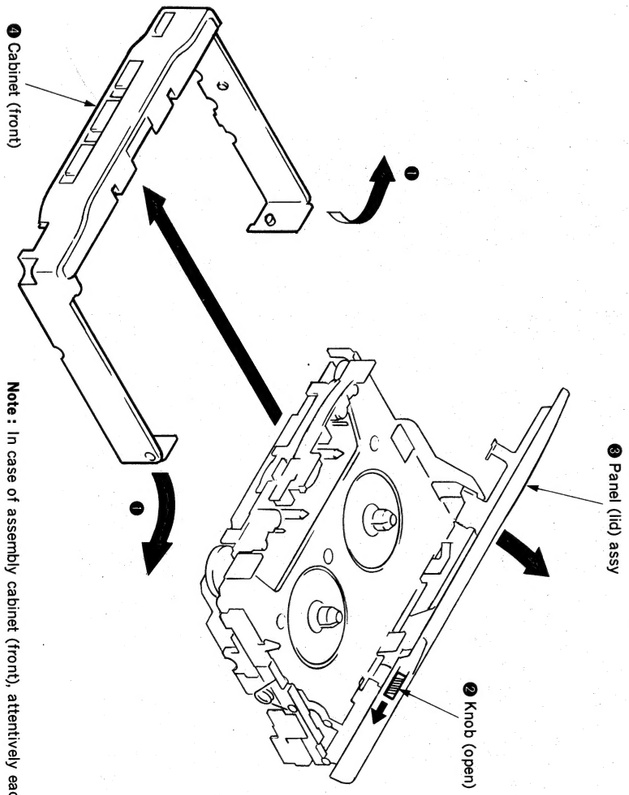
Record on the other side of the tape or cover the slot with plastic tape. Slide REC again in the direction of the arrow to start recording.

SECTION 3
DISASSEMBLY

Note : Follow the disasssembly procedure in the numerical order given.

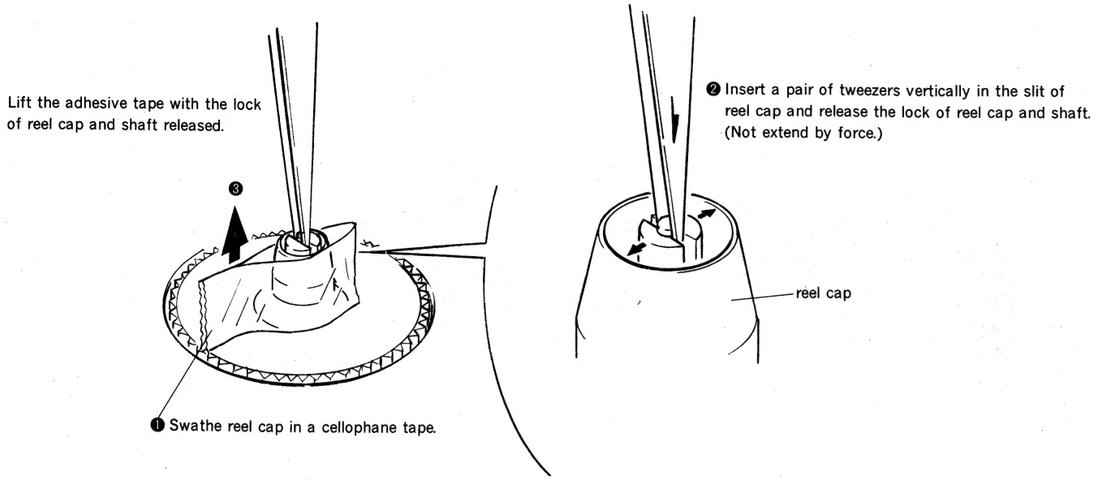
3-1. CABINET (REAR)

3-2. CABINET (FRONT)



Note : In case of assembly cabinet (front), attentively each switches main board.

3-3. GEAR (S REEL, T REEL) ASSY



SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be perfomed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	22—45g•cm (0.31—0.62 oz•inch)
Forward back tension	CQ-102C	1.0—3.5g•cm (0.014—0.049 oz•inch)
Reverse	CQ-102RB	22—45g•cm (0.31—0.62 oz•inch)
Reverse back tension	CQ-102RB	1.0—3.5g•cm (0.014—0.049 oz•inch)
Fast Forward, Rewind	CQ-201B	more than 60g•cm (more than 0.83 oz•inch)

Tape Tension Measurement

Mode	Meter	Meter Reading
Forward	CQ-403A	more than 50g (more than 1.76 oz)
Reverse	CQ-403R	

SECTION 5
ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustments should be performed with the following procedure unless otherwise noted.
   • Switches and controls position
   Forward/Reverse switch (S101) : Forward
   MIC SENS switch (S102) : H (high)
   VOLUME control (RV101) : max.
   VOR switch (S501) : OFF
   TAPE SPEED control (RV601) : mechanical center
   REC switch (S706) : OFF
   REVERSE switch (S707) : OFF

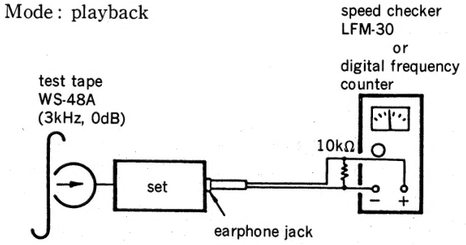
Test Tape

Tape	Contents	Use
WS-48A	3kHz, 0dB	Tape speed adjustment

Tape Speed Adjustment

Procedure:

Mode: playback

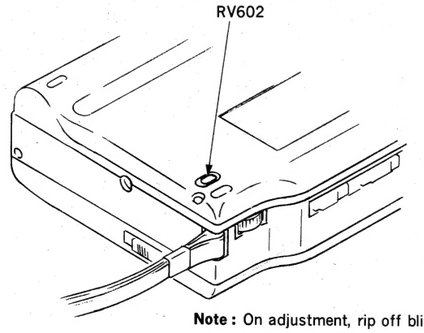


Adjustment Limits:

Speed checker	Digital frequency counter
3,000Hz±0.5%	2,985—3,015Hz

Frequency difference between the beginning and the end of the tape should be within 1% (30Hz).

Adjustment Location:

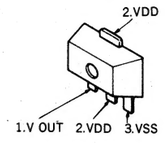


Note: On adjustment, rip off blind plate on hole of cabinet (rear).

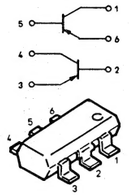
SECTION 6
DIAGRAMS

6-1. SEMICONDUCTOR LEAD LAYOUTS

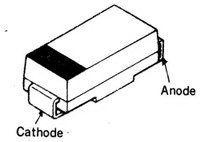
SCI7700YBA



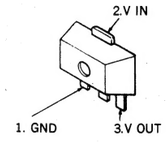
XN4404



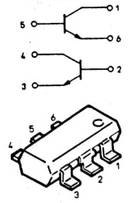
MA110



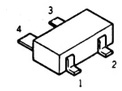
SCI7710YHA



XN4501

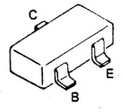


MA713



1. Cathode
2. Cathode
3. Anode
4. Anode

UN5114
UN5115
UN5215
UN5216
UN5217
2SB1218A-R
2SD1819A-R



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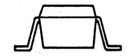
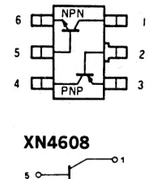
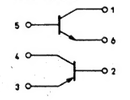
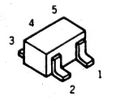




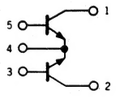
XN4608

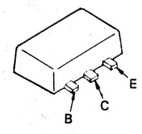


XN1215
XN1216
XN1217

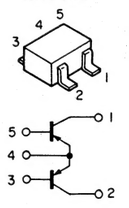


2SB798-DL

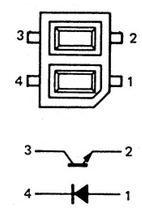




XN1401



GP2S22B



6-2. PRINTED WIRING BOARDS ● Refer to page 8 for Semiconductor Lead Layouts.

● **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D701	G-11	Q501	H-15	Q713	F-10
D702	H-12	Q502	I-8	Q714	G-13
		Q503	H-8	Q715	H-13
IC101	I-18	Q504	H-16	Q716	G-16
IC501	J-15	Q505	I-8	Q717	G-16
IC601	G-14	Q506	I-14	Q718	G-16
IC701	G-8	Q507	H-7	Q719	H-4
IC702	G-10	Q508	I-14	Q720	G-16
		Q509	J-14	Q721	H-16
Q101	I-19	Q510	H-6	Q1001	H-6
Q102	J-19	Q601	J-12	Q1002	H-17
Q103	J-18	Q602	J-13	Q1003	H-6
Q104	J-19	Q603	F-14	Q1004	H-6
Q105	J-5	Q604	F-9	Q1005	G-16
Q106	I-21	Q605	F-15	Q1006	G-16
Q107	I-6	Q606	F-15		
Q108	I-6	Q607	I-13		
Q109	G-20	Q608	G-9		
Q110	G-20	Q609	G-9		
Q111	I-16	Q701	G-5		
Q112	I-7	Q702	G-18		
Q113	J-16	Q703	G-17		
Q114	I-13	Q704	G-6		
Q115	H-13	Q705	G-19		
Q116	I-9	Q706	G-18		
Q117	I-16	Q707	G-5		
Q118	I-16	Q708	F-4		
Q119	F-21	Q709	H-5		
Q120	J-16	Q710	G-15		
Q121	J-16	Q711	H-5		
Q122	F-20	Q712	H-18		

Note:
- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.

M901 モータ MOTOR

【モータフレキシブル基板】
【MOTOR FLEXIBLE BOARD】

【メイン基板】—A面—
【MAIN BOARD】—SIDE A—

【メイン基板】—B面—
【MAIN BOARD】—SIDE B—

S704 TAB A LATCH DET
S705 TAB B LATCH DET
S706 録音 REC OFF→ON
S707 反転 REVERSE OFF→ON
S102 マイク感度 低→中→高 MIC SENS L→M→H
S501 VOR 切→入 OFF→ON
S703 TAPE DET
RV101 音量 VOLUME
RV601 テープスピード TAPE SPEED
CN101 DC IN 3V
乾電池 UM-3×2 3V
DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 2PCS,3V
(シャーシ) (CHASSIS)
SERVICE TAP
390Ω HEAD GASS DET

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

d from the component side.
d from the conductor side.

side which is seen.
rear side.

RY BATTERY
SIZE"AA"
DESIGNATION R6)
2PCS,3V

液晶表示素子
LIQUID CRYSTAL DISPLAY PANEL

【シスコンフレキシブル基板】
【SYSCON FLEXIBLE BOARD】

TIMER
PI.I
REEL
RESET
MUTE
REC
SP.CTL
A.POWER
P0.1
P0.2
P2.0
P0.3
P2.2
P.CTL
M.BRK
M.SENS
M.CTL
P2.1
P2.3
CUE MARKER
GND
+1.5V
LED⊕
LED⊖
MIC⊖
MIC⊕
SP
SP

SP901 スピーカ SPEAKER
WHT
BLU
RED
BLK
MIC901 Flat Mic

COUNTER RESET
REC/BATT
ホールド HOLD

キーボードスイッチ(メンブレン)
KEYBOARD SWITCH

一時停止 PAUSE
早送り/キュー FF/CUE
巻戻し/レビュー REW/REVIEW
再生 PLAY
停止 STOP
キューマーカー CUE MARKER

1 2 3 4 5 6 7
STOP PLAY FF REW PAUSE GND CUE

【録音/再生ヘッド】
【フレキシブル基板】
【REC/PB HEAD FLEXIBLE BOARD】

HRP901 録音/再生ヘッド REC/PB HEAD
E FWD⊕
E COM (GND)
E REV⊕

【消去ヘッド】
【フレキシブル基板】
【ERASE HEAD FLEXIBLE BOARD】

HE901 消去ヘッド (FWD) ERASE HEAD (FWD)
HE902 消去ヘッド (REV) ERASE HEAD (REV)

B+
GND

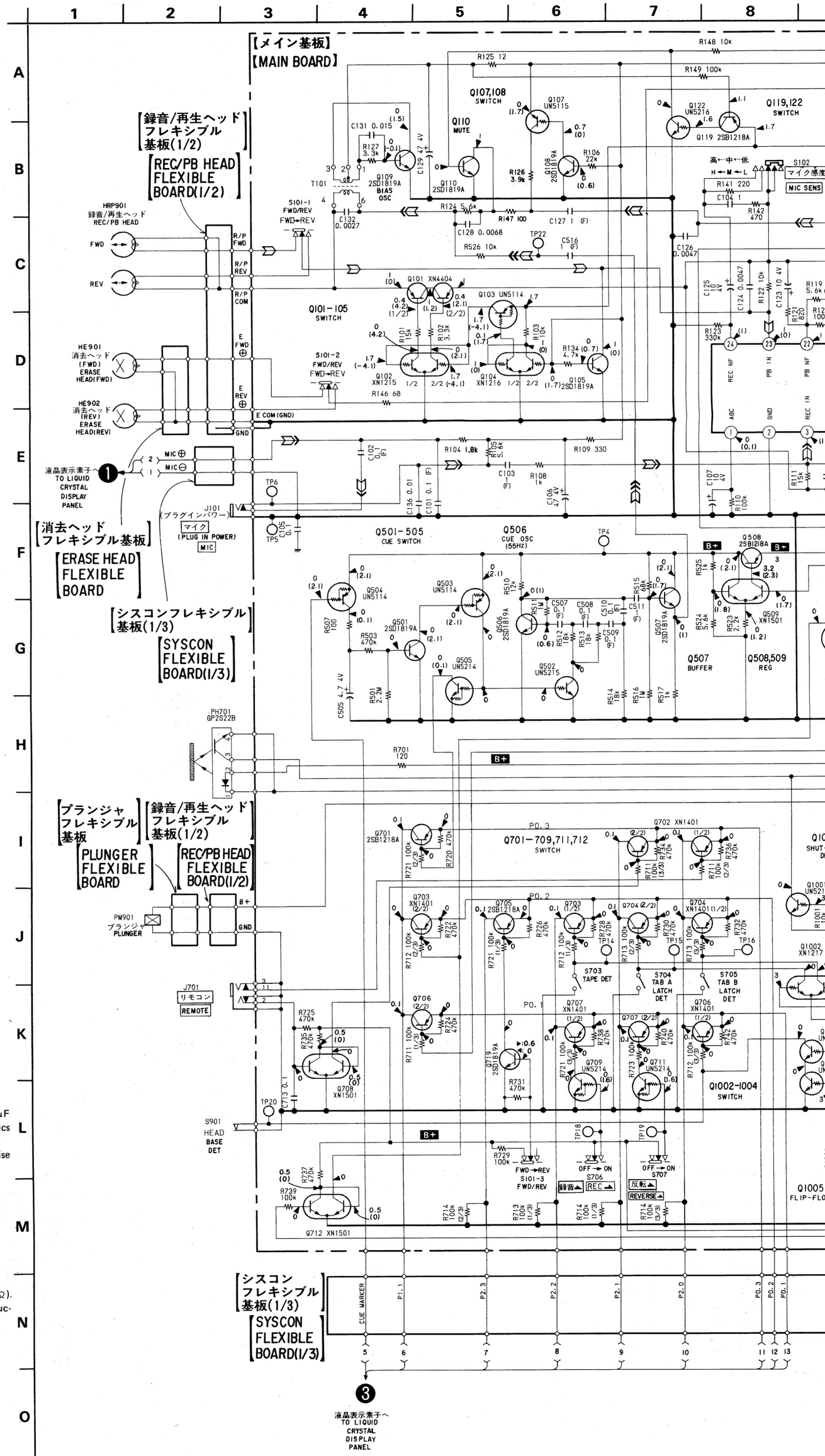
【プランジャ】
【フレキシブル基板】
【PLUNGER FLEXIBLE BOARD】

PM901 プランジャ PLUNGER

GND
E REV⊕
R/P FWD
R/P COM
R/P REV
E COM (GND)
E FWD⊕

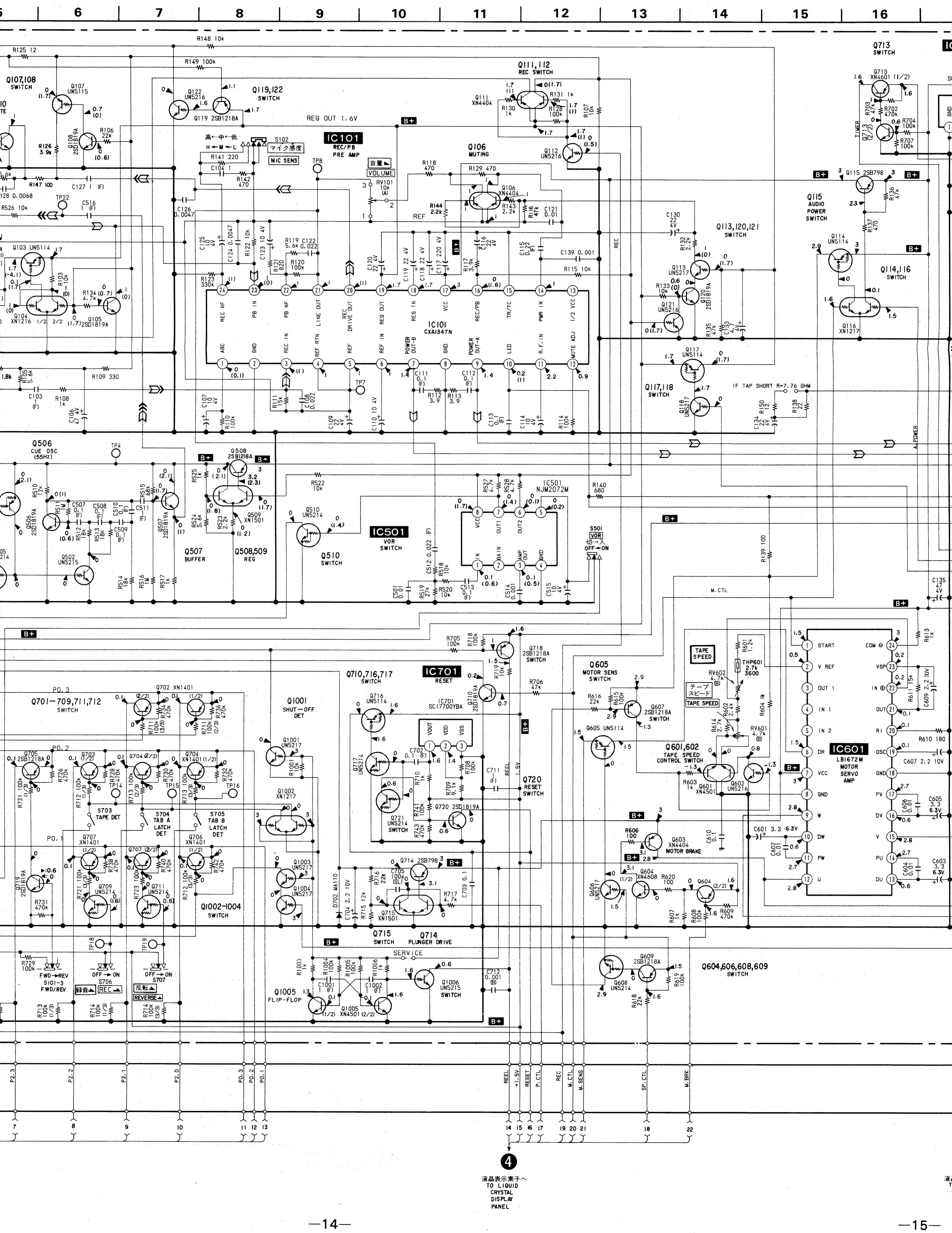
J701 リモコン REMOTE
J102 イヤホン EAR
J101 (プラグインパワー) マイク (PLUG IN POWER) MIC
(シールド紙) (SHIELD PAPER)
(シャーシ) (CHASSIS)

6-3. SCHEMATIC DIAGRAM—Audio Section— ● Refer to page 16 for IC Block Diagrams.



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : adjustment for repair.
- Power voltage is dc 3V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
  < > : VOR: ON
  [ ] : REVERSE: ON
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB
  ▷▷ : REC


5
6
7
8
9
10
11
12
13
14
15
16
IC101
REC/PB
PRE AMP
IC101
CXA1347N
REG OUT 1.6V
Q106
MUTING
Q111,112
REC SWITCH
Q119,122
SWITCH
Q107,108
SWITCH
S102
マイク感度
MIC SENS
音量
VOLUME
Q113,120,121
SWITCH
Q115
AUDIO
POWER
SWITCH
Q114,116
SWITCH
Q117,118
SWITCH
IF TAP SHORT R=7.76 OHM
Q713
SWITCH
TIMER
Q506
CUE OSC
(55HZ)
Q507
BUFFER
Q508,509
REG
Q510
SWITCH
IC501
VOR
SWITCH
IC501
NJM2072M
S501
VOR
切→入
OFF→ON
M.CTL
A.POWER
IC601
LB1672M
MOTOR
SERVO
AMP
START
V REF
OUT 1
IN 1
IN 2
DR
VCC
GND
W
DW
PW
U
COM
VSP
IN
OUT
RI
OSC
PV
DV
V
PU
DU
Q605
MOTOR SENS
SWITCH
Q601,602
TAPE SPEED
CONTROL SWITCH
TAPE SPEED
テープスピード
Q603
XN4404
MOTOR BRAKE
Q604,606,608,609
SWITCH
IC701
RESET
IC701
SC17700YBA
Q710,716,717
SWITCH
Q718
2SB1218A
SWITCH
Q720
RESET
SWITCH
Q1001
SHUT-OFF
DET
Q701-709,711,712
SWITCH
Q1002-1004
SWITCH
S703
TAPE DET
S704
TAB A
LATCH
DET
S705
TAB B
LATCH
DET
Q715
SWITCH
Q714
PLUNGER DRIVE
SERVICE
Q1005
FLIP-FLOP
Q1006
UN5215
SWITCH
S101-3
FWD→REV
FWD/REV
S706
OFF→ON
録音
REC
S707
OFF→ON
反転
REVERSE
P2.3
P2.2
P2.1
P2.0
P0.3
P0.2
P0.1
REEL
+1.5V
RESET
P.CTL
REC
M.CTL
M.SENS
SP.CTL
M.BRK
液晶表示素子へ
TO LIQUID
CRYSTAL
DISPLAY
PANEL

9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

REG OUT 1.6V

IC101 REC/PB PRE AMP

IC101 CXA1347N

Q106 MUTING

Q111,112 REC SWITCH

Q113,120,121 SWITCH

Q115 AUDIO POWER SWITCH

Q114,116 SWITCH

Q117,118 SWITCH

IF TAP SHORT R=7.76 OHM

IC702 REG

Q713 SWITCH

IC702 SC1771OYHA

CN101 DC IN 3V

DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 2PCS,3V

乾電池 UM3×2 3V

J102 イヤホン EAR

液晶表示素子へ TO LIQUID CRYSTAL DISPLAY PANEL

【シスコン フレキシブル 基板(1/3)】

【SYSCON FLEXIBLE BOARD(1/3)】

IC501 VOR SWITCH

IC501 NJM2072M

Q510 SWITCH

S501 VOR OFF→ON

IC701 RESET

Q710,716,717 SWITCH

Q720 RESET SWITCH

Q721 SWITCH

Q715 SWITCH

Q714 PLUNGER DRIVE

Q1006 SWITCH

Q605 MOTOR SENS SWITCH

Q601,602 TAPE SPEED CONTROL SWITCH

Q603 MOTOR BRAKE

Q604,606,608,609 SWITCH

IC601 LB1672M MOTOR SERVO AMP

【モータ フレキシブル 基板】

【MOTOR FLEXIBLE BOARD】

M901 モータ MOTOR

REEL | +1.5V | RESET | P.CTL | REC | M.CTL | M.SENS | SP.CTL | M.BRK | GND | MUTE | A.POWER | TIMER | LED ⊖ | LED ⊕

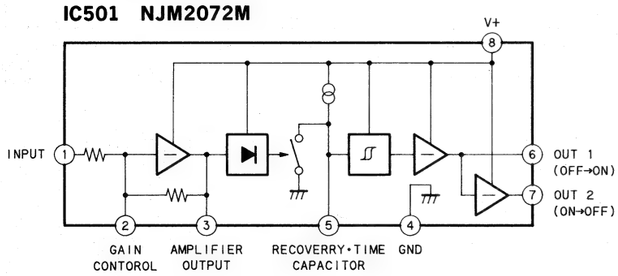
14 15 16 17 19 20 21 18 22 23 24 25 26 27 28

4 液晶表示素子へ TO LIQUID CRYSTAL DISPLAY PANEL

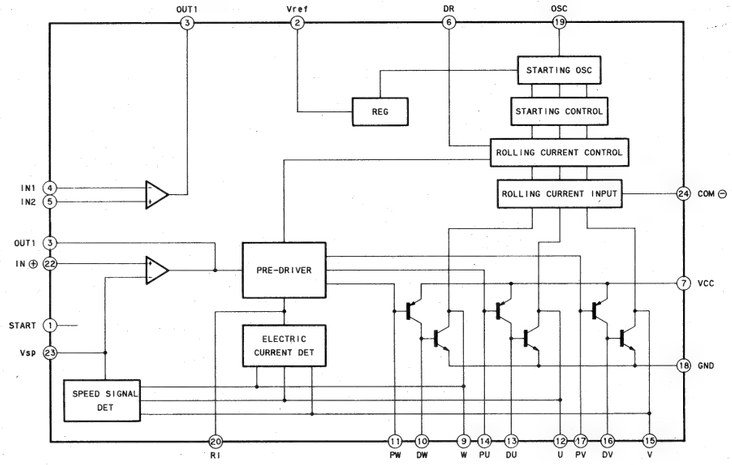
5 液晶表示素子へ TO LIQUID CRYSTAL DISPLAY PANEL

• IC Block Diagrams

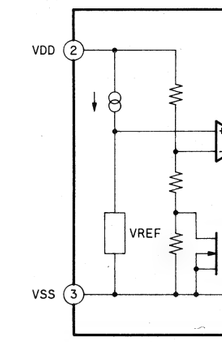
IC501 NJM2072M



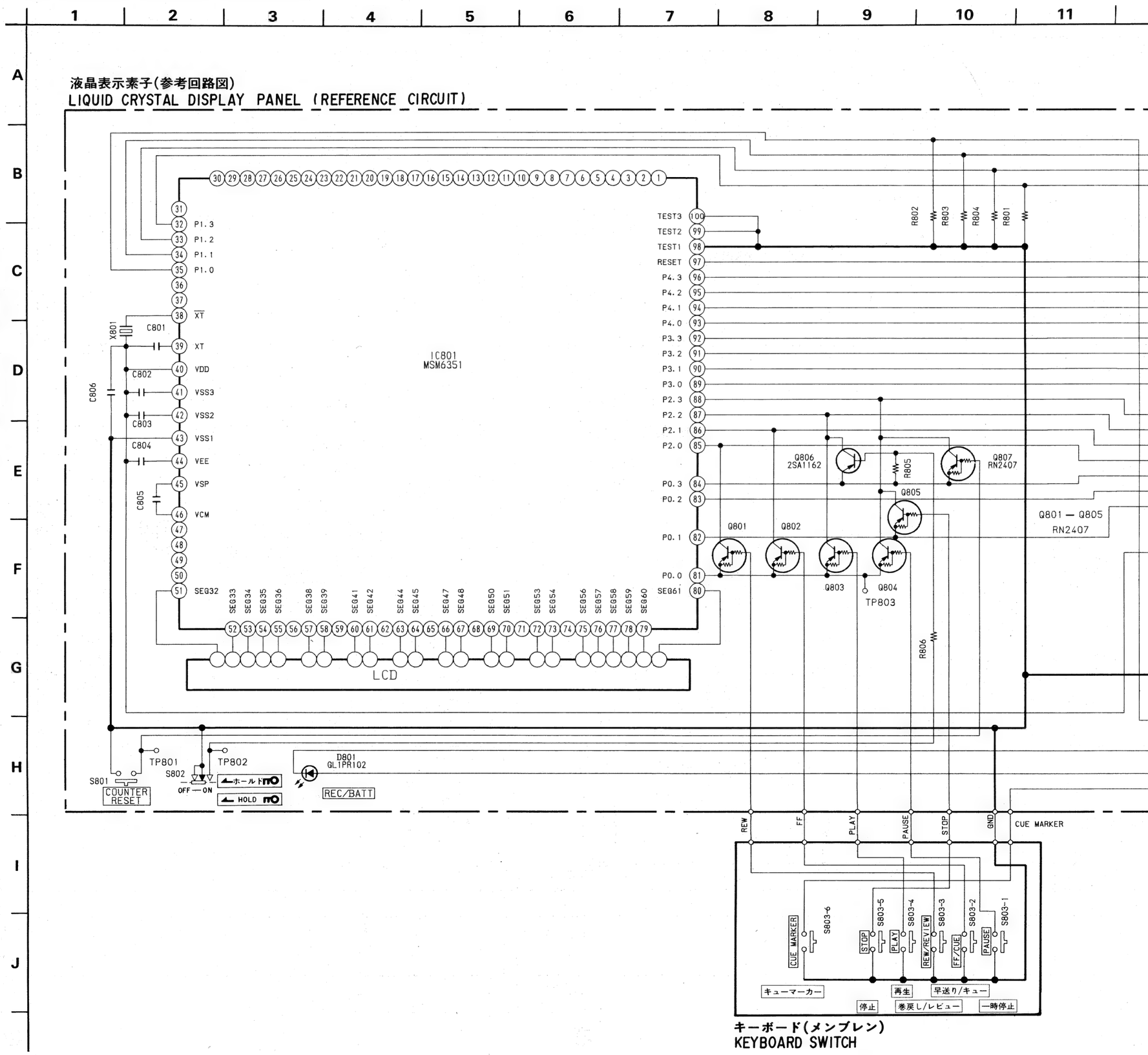
IC601 LB1672M



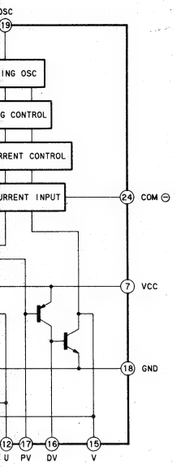
IC701 SCI770



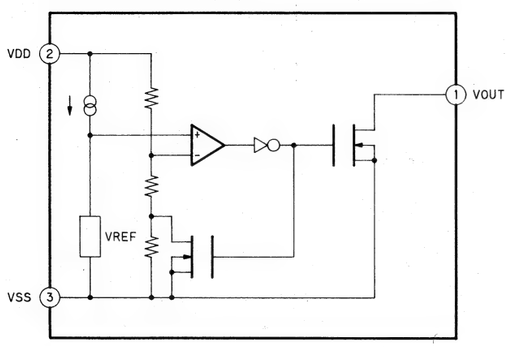
6-4. SCHEMATIC DIAGRAM—Display Section—



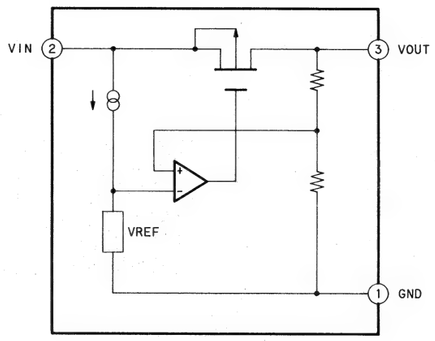
キーボード(メンブレン)
KEYBOARD SWITCH

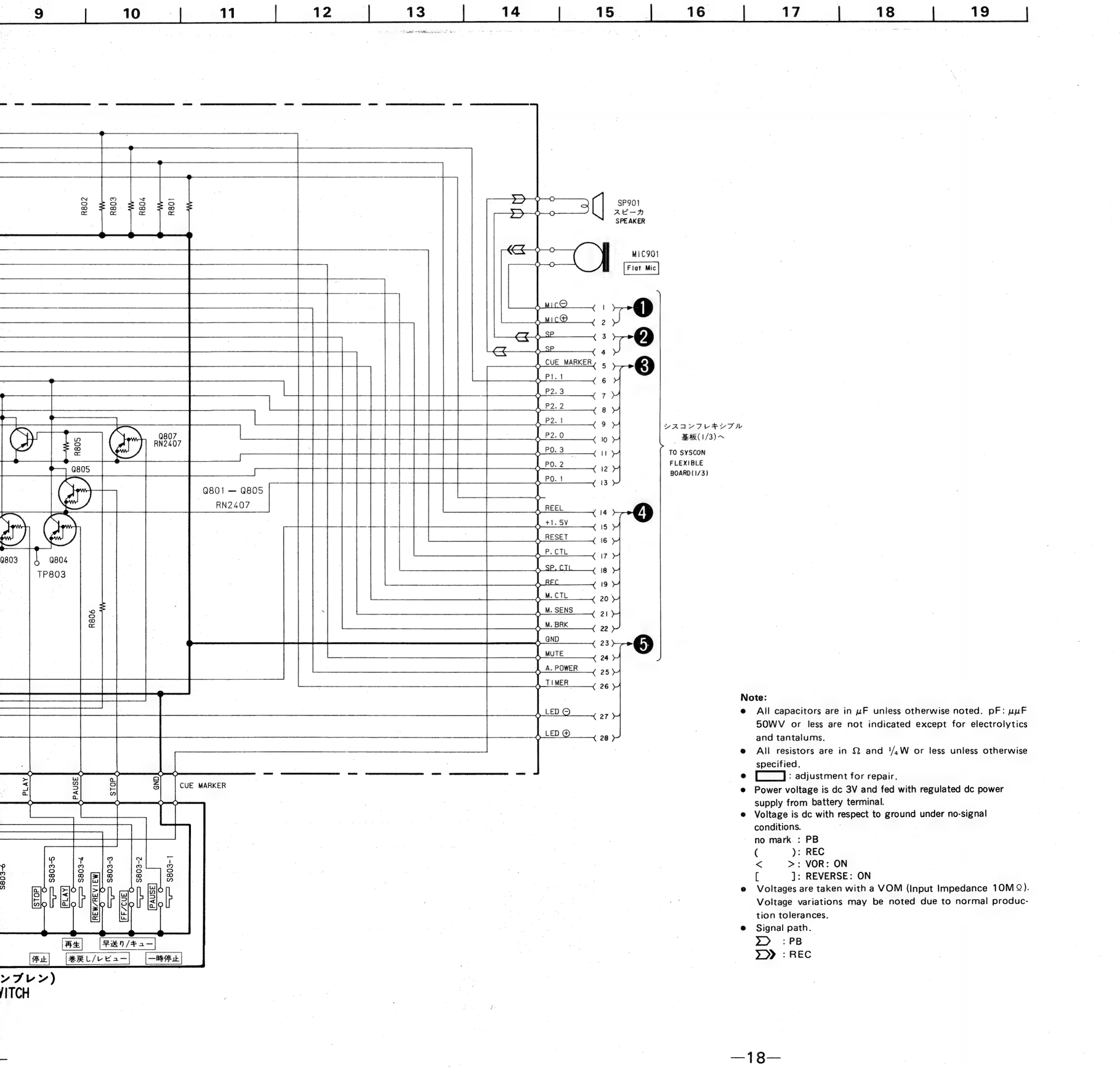


IC701 SCI7700YBA



IC702 SCI7710YHA





Note:

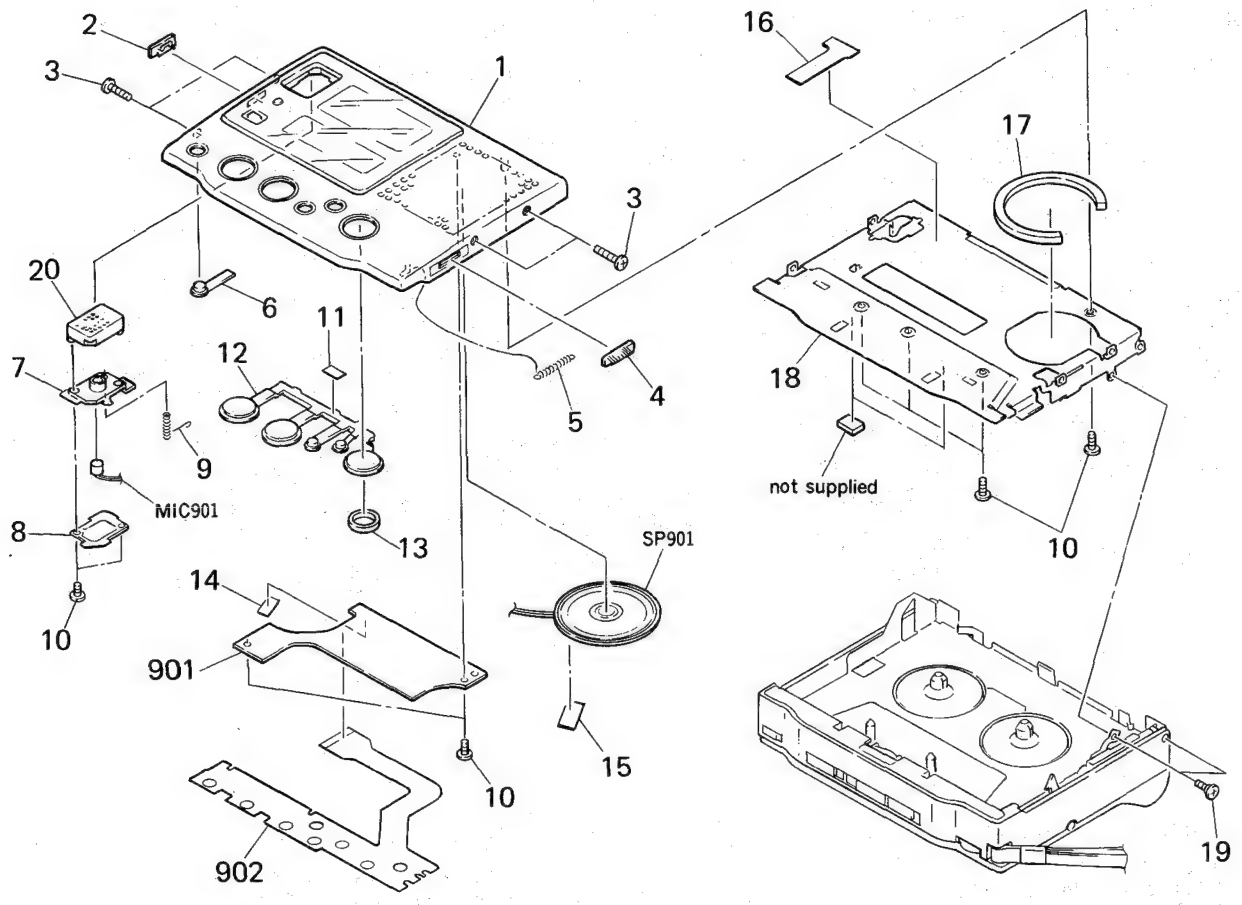
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▭ : adjustment for repair.
- Power voltage is dc 3V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
  < > : VOR: ON
  [ ] : REVERSE: ON
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB
  ▷▷ : REC

SECTION 7
EXPLODED VIEWS

NOTE:

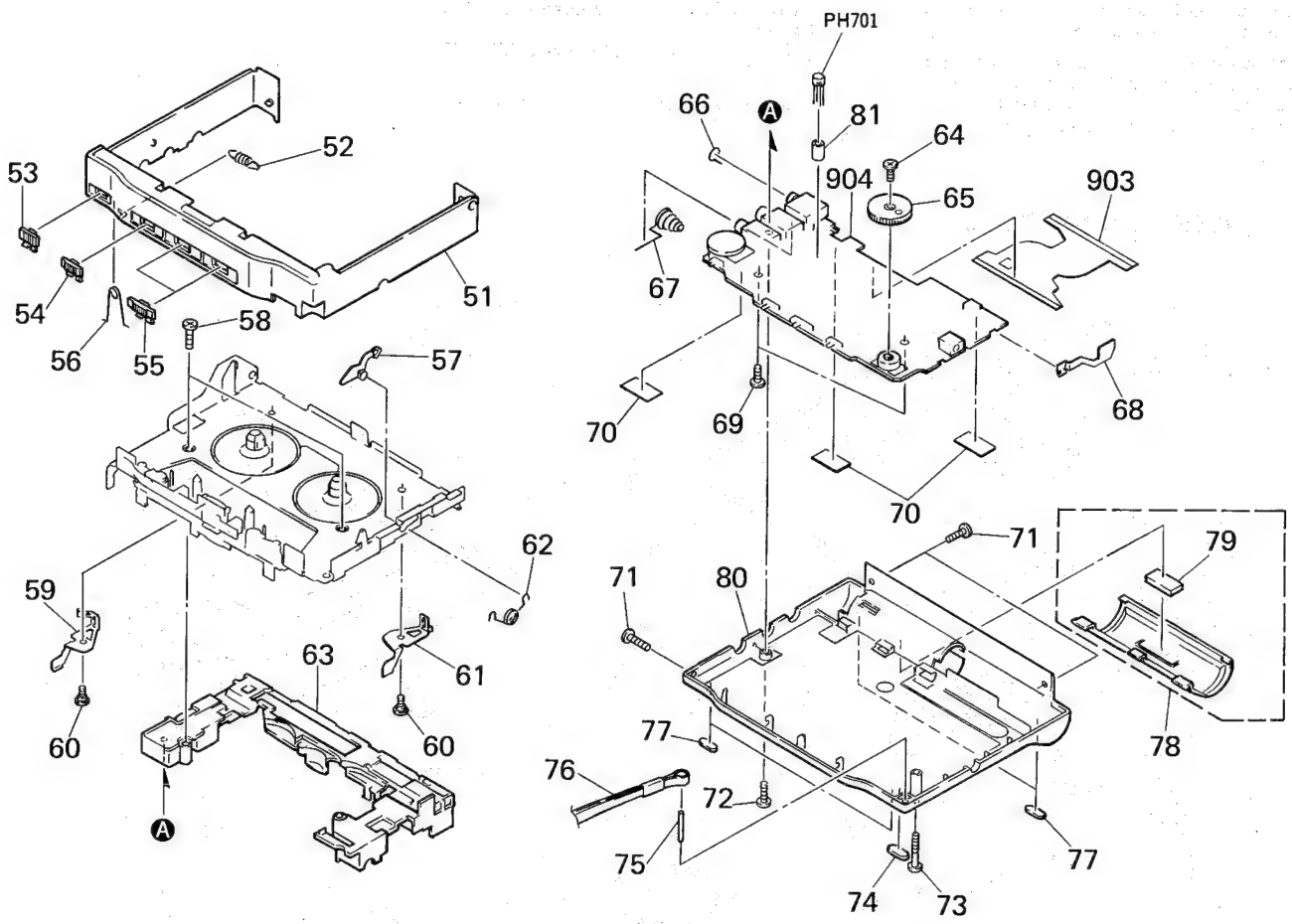
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

7-1. CASSETTE HOLDER BLOCK



Ref.No	Part No.	Description	Remarks
1	X-3328-431-1	PANEL (LID) ASSY	
2	3-360-614-01	KNOB (HOLD)	
3	3-704-197-51	SCREW (M1.4X3.5), LOCKING	
4	3-360-632-01	KNOB (OPEN)	
5	3-559-402-00	SPRING, TENSION	
6	3-360-610-01	BUTTON (CUE)	
7	3-360-613-01	CUSHION (MICROPHONE)	
8	3-360-612-01	CABINET (MICROPHONE LOWER)	
9	3-360-635-01	SPRING, GROUND	
10	3-318-382-91	SCREW (1.7X2.5), TAPPING	
11	3-831-441-XX	CUSHION	
12	3-360-642-01	BUTTON (P.S)	
13	*3-362-533-01	CUSHION (PAUSE)	
14	9-911-839-XX	RUBER, (B)	
15	3-831-441-11	CUSHION (B)	
16	3-831-441-11	CUSHION (HOLDER)	
17	3-360-607-01	CUSHION (SP)	
18	X-3328-424-1	HOLDER ASSY, CASSETTE	
19	3-311-772-11	SHAFT (A), STOPPER	
20	X-3328-428-1	CABINET (MIC) ASSY	
901	A-3089-558-A	PC BOARD ASSY, SYSTEM CONTROL (LIQUID CRYSTAL DISPLAY PANEL)	
902	1-572-212-11	SWITCH, KEYBOARD	
MIC901	1-542-142-11	MICROPHONE, BUILT-IN (FLAT MIC)	
SP901	1-544-328-11	SPEAKER	

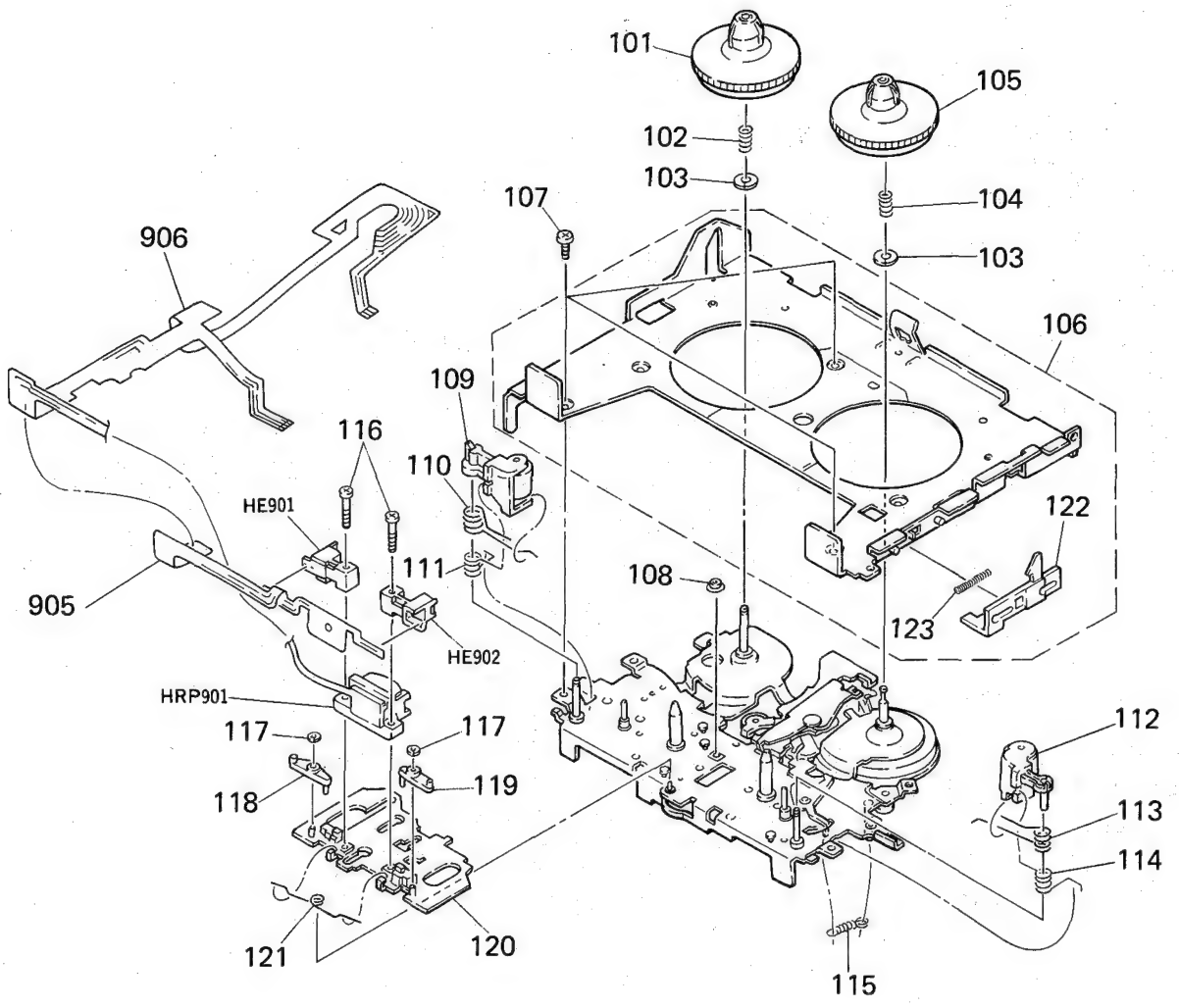
7-2. CABINET BLOCK



Ref.No	Part No.	Description	Remarks
51	3-360-647-11	CABINET (FRONT)	
52	3-360-633-01	SPRING, TENSION	
53	3-360-622-01	KNOB (REC)	
54	3-360-623-01	KNOB (DIR)	
55	3-360-624-01	KNOB (VOR)	
56	3-360-625-01	SPRING (REC), TORSION	
57	X-3328-425-1	LEVER ASSY, TOGGLE	
58	3-893-942-31	SCREW (1.7X4), TAPPING (B)	
59	*3-360-637-01	LEVER (CLAW, L)	
60	3-333-124-01	SCREW (M1.4), STEP, PRECISION	
61	*3-360-638-01	LEVER (CLAW, R)	
62	3-360-620-01	SPRING (HOLDER), TORSION	
63	3-360-644-01	FRAME (MD)	
64	3-318-382-31	SCREW (1.7X3), TAPPING	
65	3-360-621-01	KNOB (SPEED)	
66	3-362-348-01	SPRING (REMOTE CONTROL)	
67	3-360-626-01	SPRING, BATTERY COIL	

Ref.No	Part No.	Description	Remarks
68	3-360-627-01	TERMINAL BOARD, BATTERY	
69	3-703-502-31	SCREW (+PHW 1.4X3)	
70	3-831-441-11	CUSHION (B)	
71	3-704-197-51	SCREW (M1.4X3.5), LOCKING	
72	3-318-203-81	SCREW (B1.7X7), TAPPING	
73	3-342-171-51	SCREW (B1.7), TAPPING	
74	3-349-258-11	PLATE, BLIND	
75	3-576-082-00	PIN, PARALLEL	
76	3-360-636-01	STRAP, HAND	
77	3-360-629-01	CUSHION (FOOT)	
78	X-3328-426-1	LID ASSY, BATTERY CASE	79
79	9-911-815-01	CUSHION	
80	X-3328-433-1	CABINET (REAR) ASSY	
81	3-360-609-01	SPACER (REFLECTOR)	
903	X-3362-303-1	PC BOARD KIT, SYSCON FLEXIBLE	
904	A-3015-870-A	PC BOARD ASSY, MAIN	
PH701	8-749-920-97	PHOTO REFLECTOR GP2S22B	

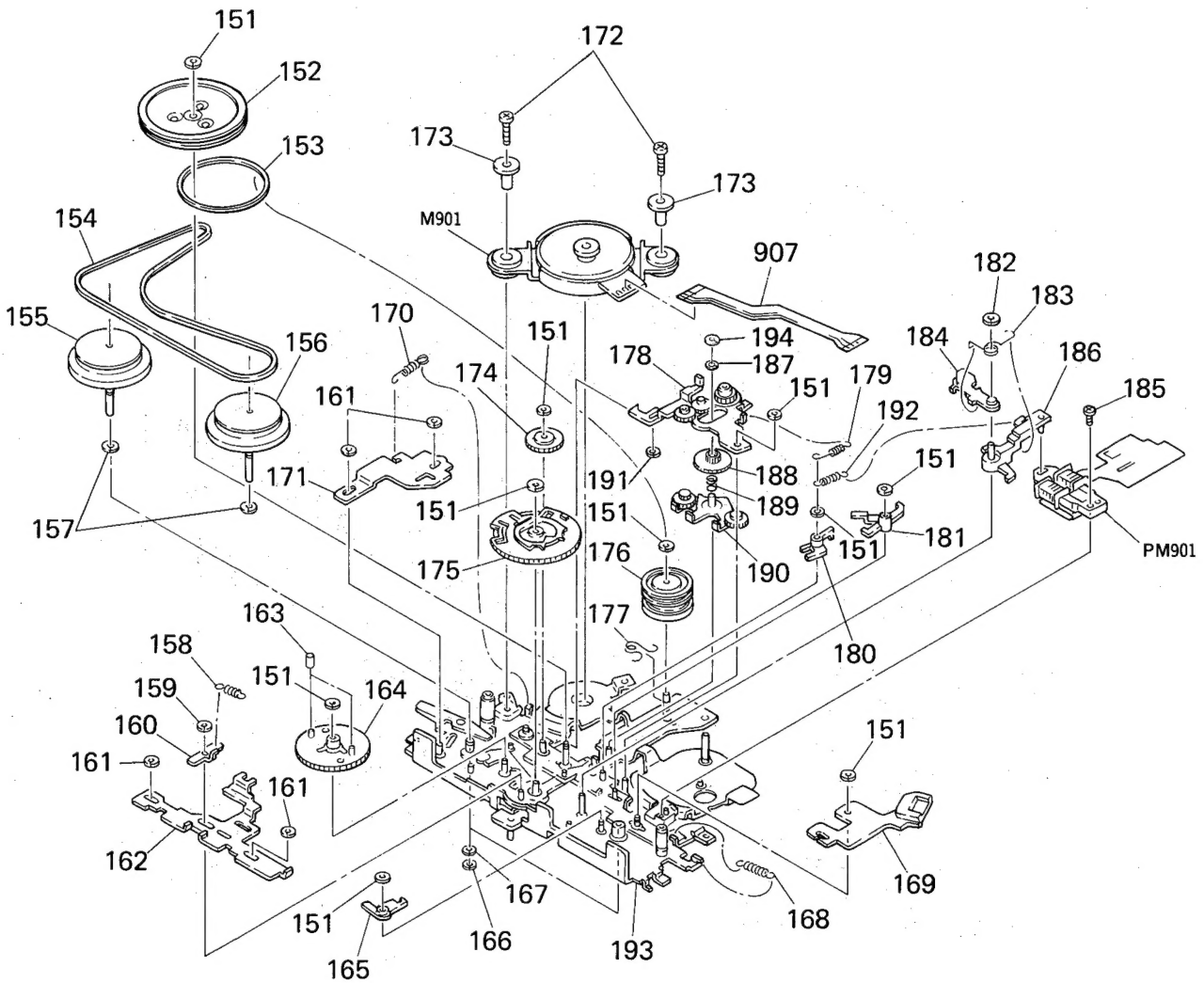
7-3. MECHANISM BLOCK (1) (MT-77-44)



Ref.No	Part No.	Description	Remarks
101	X-3328-420-1	GEAR (S REEL) ASSY	
102	3-360-520-01	SPRING (3), COMPRESSION	
103	3-701-436-51	WASHER, POLYEHTHYLENE (T=0.2)	
104	3-360-519-01	SPRING (3), COMPRESSION	
105	3-360-604-01	GEAR (T REEL)	
106	X-3328-417-1	PANEL ASSY, REEL	122, 123
107	3-704-197-21	SCREW (M1.4X2.5), LOCKING	
108	3-355-380-01	COLLAR	
109	X-3328-406-1	LEVER (PINCH R) ASSY	
110	3-360-550-01	SPRING (PINCH R), TORSION	
111	3-360-553-01	SPRING (P RETURN R), TORSION	
112	X-3328-407-1	LEVER (PINCH N) ASSY	
113	3-360-551-01	SPRING (PINCH N), TORSION	
114	3-360-552-01	SPRING (P RETURN N), TORSION	

Ref.No	Part No.	Description	Remarks
115	3-360-521-01	SPRING, TENSION	
116	3-355-407-01	SCREW (M1.4), STEP	
117	3-363-748-11	WASHER (0.9-2.3) (T=0.25)	
118	X-3328-415-1	LEVER (P PRESS,R) ASSY	
119	X-3328-416-1	LEVER (P PRESS,N) ASSY	
120	X-3328-422-1	LEVER (HEAD) ASSY	
121	3-360-565-01	SPRING (HEAD RETURN), TORSION	
122	3-360-508-01	LEVER (OPEN 1)	
123	3-360-512-01	SPRING, COMPRESSION	
905	*1-635-263-11	PC BOARD, ERASE HEAD FLEXIBLE	
906	*1-635-262-11	PC BOARD, REC/PB HEAD FLEXIBLE	
HE901, HE902	1-543-732-11	HEAD, MAGNETIC (ERASE)	905
HRP901	1-543-718-11	HEAD, MAGNETIC (REC/PB)	906

7-4. MECHANISM BLOCK (2) (MT-77-44)



Ref.No	Part No.	Description	Remarks
151	3-338-645-31	WASHER (0.8-2.5) (T=0.25)	
152	3-360-566-01	PULLEY (MIDWAY)	
153	3-360-527-01	BELT	
154	3-360-526-01	BELT	
155	X-3328-410-1	FLYWHEEL (N) ASSY	
156	X-3328-409-1	FLYWHEEL (R) ASSY	
157	3-350-945-31	WASHER (T=0.3)	
158	3-360-546-01	SPRING, TENSION	
159	3-363-748-01	WASHER (0.9-2.3) (T=0.19)	
160	3-360-559-01	LEVER (DIR. B)	
161	3-341-473-01	WASHER (MP) (T=0.25)	
162	*3-360-531-01	LEVER (DIR)	
163	3-363-129-01	COLLAR (SUB)	
164	3-363-130-01	GEAR (SUB)	
165	3-360-548-01	LEVER (TRIGGER, C)	
166	3-348-993-01	WASHER (T=0.25)	
167	3-350-989-01	WASHER (T=0.25)	
168	3-360-547-01	SPRING, TENSION	
169	3-355-399-01	LEVER (NR SELECTION)	
170	3-360-563-01	SPRING, TENSION	
171	3-362-662-01	LEVER (LOCK)	
172	3-703-816-21	SCREW (M1.4X5.0), SPECIAL HEAD	
173	3-360-510-01	COLOR (MOTOR)	
174	X-3328-405-1	GEAR (TRIGGER) ASSY	

Ref.No	Part No.	Description	Remarks
175	3-360-542-01	GEAR (SET UP A)	
176	X-3328-408-1	LIMITER ASSY	
177	3-360-554-01	SPRING (TU), TORSION	
178	X-3328-419-1	LEVER (FR RELEASE) ASSY	
179	3-360-545-01	SPRING, TENSION	
180	3-355-395-01	LEVER (FR RELEASE.B)	
181	3-360-558-01	LEVER (SHUT-OFF, A)	
182	3-348-953-21	WASHER (T=0.25)	
183	3-360-555-01	SPRING (TR), TORSION	
184	3-360-537-01	LEVER (TRIGGER. E)	
185	3-345-648-06	SCREW (M1.4X3.3), TOOTHED LOCK	
186	3-355-379-01	LEVER (TRIGGER D)	
187	3-355-388-01	WASHER	
188	3-360-540-01	GEAR (FRB)	
189	3-355-396-01	SPRING, COMPRESSION	
190	X-3328-421-1	LEVER (FR) ASSY	
191	3-349-859-01	WASHER	
192	3-363-792-01	SPRING, TENSION (TRIGGER, D)	
193	X-3328-423-1	CHASSIS ASSY	
194	3-363-748-11	WASHER (0.9-2.3) (T=0.25)	
907	*1-635-226-11	PC BOARD, MOTOR FLEXIBLE	
M901	1-541-716-11	MOTOR (NBL-122)	
PM901	1-454-512-11	SOLENOID, PLUNGER	

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description			
901	A-3089-558-A	PC BOARD ASSY, SYSTEM CONTROL (LIQUID CRYSTAL DISPLAY PANEL)			
902	1-572-212-11	SWITCH, KEYBOARD			
903	X-3362-303-1	PC BOARD KIT, SYSCON FLEXIBLE			
904	A-3015-870-A	PC BOARD ASSY, MAIN			
905	*1-635-263-11	PC BOARD, ERASE HEAD FLEXIBLE			
906	*1-635-262-11	PC BOARD, REC/PB HEAD FLEXIBLE			
907	*1-635-226-11	PC BOARD, MOTOR FLEXIBLE			
		CAPACITOR			
C101	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C102	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C103	1-164-346-11	CERAMIC CHIP	1MF		16V
C104	1-164-346-11	CERAMIC CHIP	1MF		16V
C105	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C106	1-126-607-11	ELECT CHIP	47MF	20%	4V
C107	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C108	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C109	1-135-202-21	TANTAL. CHIP	22MF	20%	4V
C110	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C111	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C112	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C114	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C115	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C116	1-135-202-21	TANTAL. CHIP	22MF	20%	4V
C117	1-126-246-11	ELECT CHIP	220MF	20%	4V
C118	1-135-202-21	TANTAL. CHIP	22MF	20%	4V
C119	1-135-202-21	TANTAL. CHIP	22MF	20%	4V
C120	1-135-202-21	TANTAL. CHIP	22MF	20%	4V
C121	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C122	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C123	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C124	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C125	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C126	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C127	1-164-346-11	CERAMIC CHIP	1MF		16V
C128	1-162-969-11	CERAMIC CHIP	0.0068MF	10%	25V
C129	1-126-607-11	ELECT CHIP	47MF	20%	4V
C130	1-135-202-21	TANTAL. CHIP	22MF	20%	4V
C131	1-164-245-11	CERAMIC CHIP	0.015MF	10%	25V
C132	1-163-215-00	CERAMIC CHIP	0.0027MF	5%	50V
C133	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C134	1-135-202-21	TANTAL. CHIP	22MF	20%	4V
C135	1-126-607-11	ELECT CHIP	47MF	20%	4V
C136	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C137	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C138	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C139	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C140	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C501	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C505	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C507	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C508	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C509	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C510	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C511	1-164-346-11	CERAMIC CHIP	1MF		16V
C512	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C513	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C514	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C515	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C516	1-164-346-11	CERAMIC CHIP	1MF		16V
C601	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C602	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C603	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C604	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C605	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C606	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C607	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C609	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C610	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C701	1-126-608-11	ELECT	330MF	20%	2V
C702	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C703	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C704	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C705	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C706	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C707	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C708	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C709	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C710	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C711	1-164-346-11	CERAMIC CHIP	1MF		16V
C712	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C713	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C1001	1-164-346-11	CERAMIC CHIP	1MF		16V
C1002	1-164-346-11	CERAMIC CHIP	1MF		16V
CN101	1-569-369-11	JACK, EXTERNAL POWER (DC IN 3V)			
D701	8-719-404-16	DIODE MA713			
D702	8-719-404-46	DIODE MA110			
HE901, HE902	1-543-732-11	HEAD, MAGNETIC (ERASE) (INCLUDING FLEXIBLE PC BOARD)			
HRP901	1-543-718-11	HEAD, MAGNETIC (REC/PB) (INCLUDING FLEXIBLE PC BOARD)			
IC101	8-752-034-90	IC CXA1347N			
IC501	8-759-701-51	IC NJM2072M			
IC601	8-759-821-20	IC LB1672M			
IC701	8-759-995-32	IC SCI7700YBA			
IC702	8-759-994-35	IC SCI7710YHA			
J101	1-563-319-21	JACK (MIC)			
J102	1-507-999-21	JACK (EAR)			
J701	1-566-895-11	JACK 1P (REMOTE)			
JR1	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR2	1-216-864-11	METAL GLAZE	0	5%	1/16W
JR3	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR4	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR5	1-216-864-11	METAL GLAZE	0	5%	1/16W

Ref.No	Part No.	Description			
JR6	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR7	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR8	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR9	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR10	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR11	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR12	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR15	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR16	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR17	1-216-864-11	METAL GLAZE	0	5%	1/16W
JR18	1-216-864-11	METAL GLAZE	0	5%	1/16W
JR19	1-216-864-11	METAL GLAZE	0	5%	1/16W
JR20	1-216-864-11	METAL GLAZE	0	5%	1/16W
JR21	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR22	1-216-295-00	METAL GLAZE	0	5%	1/10W
M901	1-541-716-11	MOTOR (NBL-122)			
MIC901	1-542-142-11	MICROPHONE, BUILT-IN (FLAT MIC)			
PH701	8-749-920-97	PHOTO REFLECTOR GP2S22B			
PM901	1-454-512-11	SOLENOID, PLUNGER			
Q101	8-729-422-39	TRANSISTOR XN4404			
Q102	8-729-403-17	TRANSISTOR XN1215			
Q103	8-729-402-96	TRANSISTOR UN5114			
Q104	8-729-421-23	TRANSISTOR XN1216			
Q105	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q106	8-729-422-39	TRANSISTOR XN4404			
Q107	8-729-420-53	TRANSISTOR UN5115			
Q108	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q109	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q110	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q111	8-729-422-39	TRANSISTOR XN4404			
Q112	8-729-421-26	TRANSISTOR UN5216			
Q113	8-729-422-48	TRANSISTOR UN5217			
Q114	8-729-402-96	TRANSISTOR UN5114			
Q115	8-729-101-07	TRANSISTOR 2SB798-DL			
Q116	8-729-422-45	TRANSISTOR XN1217			
Q117	8-729-402-96	TRANSISTOR UN5114			
Q118	8-729-422-48	TRANSISTOR UN5217			
Q119	8-729-402-55	TRANSISTOR 2SB1218A-R			
Q120	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q121	8-729-421-26	TRANSISTOR UN5216			
Q122	8-729-421-26	TRANSISTOR UN5216			
Q501	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q502	8-729-420-50	TRANSISTOR UN5215			
Q503	8-729-402-96	TRANSISTOR UN5114			
Q504	8-729-402-96	TRANSISTOR UN5114			
Q505	8-729-421-26	TRANSISTOR UN5216			
Q506	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q507	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q508	8-729-402-55	TRANSISTOR 2SB1218A-R			
Q509	8-729-421-23	TRANSISTOR XN1216			
Q510	8-729-421-26	TRANSISTOR UN5216			
Q601	8-729-402-81	TRANSISTOR XN4501			
Q602	8-729-421-26	TRANSISTOR UN5216			
Q603	8-729-422-39	TRANSISTOR XN4404			
Q604	8-729-402-16	TRANSISTOR XN4608			
Q605	8-729-402-96	TRANSISTOR UN5114			
Q606	8-729-422-48	TRANSISTOR UN5217			
Q607	8-729-402-55	TRANSISTOR 2SB1218A-R			
Q608	8-729-421-26	TRANSISTOR UN5216			
Q609	8-729-402-55	TRANSISTOR 2SB1218A-R			
Q701	8-729-402-55	TRANSISTOR 2SB1218A-R			
Q702	8-729-403-42	TRANSISTOR XN1401			
Q703	8-729-403-42	TRANSISTOR XN1401			

Ref.No	Part No.	Description
Q704	8-729-403-42	TRANSISTOR XN1401
Q705	8-729-402-55	TRANSISTOR 2SB1218A-R
Q706	8-729-403-42	TRANSISTOR XN1401
Q707	8-729-403-42	TRANSISTOR XN1401
Q708	8-729-421-23	TRANSISTOR XN1216
Q709	8-729-421-26	TRANSISTOR UN5216
Q710	8-729-402-32	TRANSISTOR 2SD1819A-R
Q711	8-729-421-26	TRANSISTOR UN5216
Q712	8-729-421-23	TRANSISTOR XN1216
Q713	8-729-402-84	TRANSISTOR XN4601
Q714	8-729-101-07	TRANSISTOR 2SB798-DL
Q715	8-729-421-23	TRANSISTOR XN1216
Q716	8-729-402-96	TRANSISTOR UN5114
Q717	8-729-421-26	TRANSISTOR UN5216
Q718	8-729-402-55	TRANSISTOR 2SB1218A-R
Q719	8-729-402-32	TRANSISTOR 2SD1819A-R
Q720	8-729-402-32	TRANSISTOR 2SD1819A-R
Q721	8-729-421-26	TRANSISTOR UN5216
Q1001	8-729-422-48	TRANSISTOR UN5217
Q1002	8-729-422-45	TRANSISTOR XN1217
Q1003	8-729-422-48	TRANSISTOR UN5217
Q1004	8-729-422-48	TRANSISTOR UN5217
Q1005	8-729-402-81	TRANSISTOR XN4501
Q1006	8-729-420-50	TRANSISTOR UN5215

RESISTOR

R101	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R102	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W
R103	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R104	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W
R105	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W
R106	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R107	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R108	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R109	1-216-815-11	METAL GLAZE	330	5%	1/16W
R110	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R111	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R112	1-216-306-11	METAL GLAZE	3.9	5%	1/10W
R113	1-216-306-11	METAL GLAZE	3.9	5%	1/10W
R114	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R115	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R116	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R117	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W
R118	1-216-817-11	METAL GLAZE	470	5%	1/16W
R119	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W
R120	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R121	1-216-820-11	METAL GLAZE	820	5%	1/16W
R122	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R123	1-216-851-11	METAL GLAZE	330K	5%	1/16W
R124	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W
R125	1-216-798-11	METAL GLAZE	12	5%	1/16W
R126	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W
R127	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W
R128	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R129	1-216-817-11	METAL GLAZE	470	5%	1/16W
R130	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R131	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R132	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R133	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R134	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W
R135	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R136	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R137	1-216-817-11	METAL GLAZE	470	5%	1/16W
R138	1-216-158-00	METAL GLAZE	22	5%	1/8W
R139	1-216-809-11	METAL GLAZE	100	5%	1/16W
R140	1-216-819-11	METAL GLAZE	680	5%	1/16W

Ref.No	Part No.	Description			
R141	1-216-813-11	METAL GLAZE	220	5%	1/16W
R142	1-216-817-11	METAL GLAZE	470	5%	1/16W
R143	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R144	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R145	1-216-140-00	METAL GLAZE	3.9	5%	1/8W
R146	1-216-807-11	METAL GLAZE	68	5%	1/16W
R147	1-216-809-11	METAL GLAZE	100	5%	1/16W
R148	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R149	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R150	1-216-003-11	METAL GLAZE	12	5%	1/10W
R501	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
R503	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R507	1-216-809-11	METAL GLAZE	100	5%	1/16W
R510	1-216-834-11	METAL GLAZE	12K	5%	1/16W
R511	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R512	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R513	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R514	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R515	1-216-843-11	METAL GLAZE	68K	5%	1/16W
R516	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R517	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R518	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R519	1-216-838-11	METAL GLAZE	27K	5%	1/16W
R520	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R522	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R523	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R524	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W
R525	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R526	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R527	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W
R528	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W
R601	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W
R602	1-216-993-11	METAL GLAZE	2.4K	5%	1/16W
R603	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R604	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R606	1-216-809-11	METAL GLAZE	100	5%	1/16W
R607	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R608	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R609	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R610	1-216-812-11	METAL GLAZE	180	5%	1/16W
R611	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R613	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R614	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W
R615	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R616	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R618	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R619	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R620	1-216-809-11	METAL GLAZE	100	5%	1/16W
R701	1-216-810-11	METAL GLAZE	120	5%	1/16W
R702	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R703	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R704	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R705	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R706	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R707	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R708	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R709	1-218-345-11	METAL GLAZE	9.1K	5%	1/16W
R710	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R711	1-236-502-11	RES, NETWORK	100KX3		
R712	1-236-502-11	RES, NETWORK	100KX3		
R713	1-236-502-11	RES, NETWORK	100KX3		
R714	1-236-502-11	RES, NETWORK	100KX3		
R715	1-218-718-11	METAL CHIP	12K	0.50%	1/16W
R716	1-218-724-11	METAL CHIP	22K	0.50%	1/16W
R717	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description			
R718	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R719	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R720	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R721	1-236-502-11	RES, NETWORK	100KX3		
R722	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R723	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R724	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R725	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R726	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R728	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R729	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R730	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R731	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R732	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R734	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R735	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R736	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R737	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R738	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R739	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R740	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R741	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R742	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R743	1-216-853-11	METAL GLAZE	470K	5%	1/16W
R1001	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R1003	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R1004	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R1005	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R1006	1-216-821-11	METAL GLAZE	1K	5%	1/16W
RV101	1-238-920-11	RES, VAR, CARBON 10K (VOLUME ◣)			
RV601	1-238-947-11	RES, VAR, CARBON 4.7K (TAPE SPEED)			
RV602	1-238-663-11	RES, ADJ, CERMER 4.7K			
S101	1-572-214-11	SWITCH, SLIDE (FWD/REV)			
S102	1-571-506-41	SWITCH, SLIDE (MIC SENS)			
S501	1-571-275-31	SWITCH, SLIDE (VOR)			
S703	1-570-953-11	SWITCH, PUSH (1 KEY)(TAPE DET)			
S704	1-571-585-11	SWITCH, PUSH (1 KEY)(TAB A)			
S705	1-571-585-11	SWITCH, PUSH (1 KEY)(TAB B)			
S706	1-572-263-11	SWITCH, SLIDE (REC ◣)			
S707	1-572-263-11	SWITCH, SLIDE (REVERSE ◣)			
S901	1-570-395-11	SWITCH, LEAF (HEAD BASE DET)			
SP901	1-544-328-11	SPEAKER			
T101	1-433-286-11	TRANSFORMER, BIAS OSCILLATION			
THP601	1-809-137-11	THERMISTOR, POSITIVE			

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ACCESSORIES & PACKING MATERIALS

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⚠	1-465-481-11	(US)....ADAPTOR, AC (AC-77)
*	3-355-341-01	CUSHION
	3-360-641-01	CASE, CARRYING
*	3-360-650-01	(US)....INDIVIDUAL CARTON
*	3-360-652-01	(US)....CASE, ACCESSORY
*	3-360-653-01	(CND, UK, E)....INDIVIDUAL CARTON
*	3-360-655-01	(AEP)....INDIVIDUAL CARTON
	3-701-625-00	(AEP)....BAG, POLYETHLENE
	3-751-587-11	(EXCEPT FOR US)....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
	3-751-587-21	(US)....MANUAL, INSTRUCTION (ENGLISH)
	3-751-587-41	(AEP)....MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)
	3-752-541-11	(AEP, UK, E)....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
	3-752-541-21	(US, CND)....MANUAL, INSTRUCTION (ENGLISH)
	8-952-222-90	(US)....MDR-E140C SET